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Improving Maternal and Child Health Outcomes: A Community Midwifery Approach in Purwakarta, Indonesia

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A B S T R A C T

Maternal and child health (MCH) remains a critical public health concern in Indonesia, particularly in rural areas. Community midwives play a pivotal role in addressing MCH challenges by providing accessible and culturally sensitive care. This study aimed to evaluate the impact of a community midwifery program on MCH outcomes in Purwakarta, Indonesia, focusing on antenatal care (ANC) utilization, stunting prevalence, and sanitation practices. A quasi-experimental study was conducted in Purwakarta, involving two villages: one intervention village receiving the community midwifery program and one control village with standard care. The program encompassed health education, ANC promotion, growth monitoring, and sanitation improvement initiatives. Data on ANC visits, child growth, and sanitation practices were collected at baseline and after one year. The intervention village demonstrated a significant increase in ANC attendance ($p < 0.05$) and a reduction in stunting prevalence ($p < 0.01$) compared to the control village. Improved sanitation practices were also observed in the intervention village. In conclusion, the community midwifery program effectively enhanced MCH outcomes in Purwakarta. The findings underscore the importance of community-based midwifery interventions in improving ANC utilization, reducing stunting, and promoting sanitation practices. Scaling up such programs can contribute significantly to achieving sustainable development goals related to MCH in Indonesia.

1. Introduction

Maternal and child health (MCH) stands as a cornerstone of public health, encapsulating the well-being of present and future generations. The international community, recognizing the critical importance of MCH, has enshrined its improvement within the sustainable development goals (SDGs). The ambitious targets set forth in the SDGs aim to reduce maternal mortality, end preventable deaths of newborns and children under 5 years of age, and ensure universal access to sexual and reproductive healthcare services by 2030. The urgency of these goals is underscored by the stark reality that millions of women and children continue to face preventable health risks and deaths each year, particularly in low- and middle-income countries (LMICs). Indonesia, as a rapidly developing nation with a large and diverse population, faces significant challenges in achieving optimal MCH outcomes. Despite substantial progress in recent decades, maternal mortality rates (MMR) and under-five mortality rates (U5MR) remain higher than global averages. The Indonesian government has implemented various policies and programs to address these challenges, including expanding access to healthcare facilities, increasing the number of skilled birth attendants, and promoting health education. However, significant disparities persist, particularly in rural and remote areas where access to healthcare remains limited.[1,2]

Antenatal care (ANC) is a cornerstone of MCH, providing essential health services and information to women during pregnancy. The World Health Organization (WHO) recommends a minimum of eight ANC contacts during pregnancy, with the first visit occurring in the first trimester. ANC offers opportunities for early detection and management of pregnancy complications, screening for infectious diseases, provision of micronutrient supplementation, and health education on maternal and newborn care. Studies have consistently demonstrated the positive impact of ANC on maternal and neonatal health outcomes, including reduced maternal mortality, preterm birth, low birth weight, and stillbirth. However, ANC utilization in Indonesia remains suboptimal, particularly in rural areas. Barriers to ANC access include geographical distance, financial constraints, lack of transportation, cultural beliefs, and limited awareness of the importance of ANC. The COVID-19 pandemic has further exacerbated these challenges, disrupting healthcare services and creating additional barriers to ANC access.[2,3]

Stunting, a manifestation of chronic malnutrition, is a major public health concern in Indonesia. It affects a significant proportion of children under five, impacting their physical and cognitive development, educational attainment, and economic productivity. Stunting is associated with increased morbidity and mortality, as well as long-term consequences for individuals and society. The Indonesian government has prioritized stunting reduction through various initiatives, including the National Strategy to Accelerate Stunting Prevention. These efforts focus on improving nutrition, sanitation, and access to healthcare, particularly in the first 1,000 days of life, a critical window for child growth and development. However, stunting remains a persistent challenge, requiring sustained and multi-sectoral interventions. Sanitation plays a crucial role in MCH, influencing the risk of infectious diseases, maternal and neonatal health, and child growth and development. Inadequate sanitation practices, such as open defecation, unsafe water storage, and poor hygiene, contribute to the spread of waterborne diseases, diarrhea, and intestinal parasites. These conditions can lead to malnutrition, stunting, and increased susceptibility to other infections, particularly in young children. Improving sanitation is essential for achieving optimal MCH outcomes. The Indonesian government has launched the National Sanitation Program, aiming to achieve universal access to sanitation by 2024. This program focuses on improving sanitation infrastructure, promoting behavior change, and strengthening community participation in sanitation management.[3,4]

Community midwives are at the forefront of MCH care in Indonesia, particularly in rural and underserved areas. They provide a wide range of services, including ANC, childbirth assistance, postnatal care, newborn care, family planning, and health education. Community midwives are trusted members of their communities, understanding the local context, cultural beliefs, and barriers to healthcare access. They are uniquely positioned to deliver culturally sensitive and effective interventions, empowering women and families to take ownership of their health and well-being. The Indonesian government has recognized the critical role of community midwives in improving MCH outcomes. The National Midwifery Strategic Plan aims to strengthen the capacity of midwives, expand their scope of practice, and integrate them into the broader healthcare system. Community midwives are increasingly involved in health promotion, disease prevention, and community empowerment initiatives. The Purwakarta Community Midwifery Program is a comprehensive intervention designed to address key MCH challenges in the region. The program leverages the strengths of community midwives to enhance ANC utilization, reduce stunting prevalence, and improve sanitation practices. By integrating health education, ANC promotion, growth monitoring, and sanitation

improvement initiatives, the program aims to empower communities to take ownership of their health and well-being. This study evaluates the impact of the Purwakarta Community Midwifery Program on MCH outcomes.[5,6] By comparing the intervention village with a control village, the study aims to assess the effectiveness of the program in improving ANC utilization, reducing stunting, and promoting sanitation practices. The findings of this study will provide valuable insights into the role of community midwives in addressing MCH challenges and inform the development of future interventions.

2. Methods

The research employed a quasi-experimental design, a practical approach when the random assignment of participants is not feasible or ethical. This design allows for a comparison between an intervention group receiving the community midwifery program and a control group receiving standard care, thus enabling an assessment of the program's impact. The study was conducted in Purwakarta, West Java, Indonesia, from January 2022 to December 2023. The selection of Purwakarta was purposeful, considering its representation of a rural Indonesian setting with prevalent MCH challenges. The study duration of two years allowed for adequate program implementation and evaluation of both short-term and intermediate outcomes. Two villages within Purwakarta were carefully chosen based on their comparability in terms of demographic characteristics, socioeconomic conditions, and existing healthcare infrastructure. This ensured that any observed differences in MCH outcomes could be attributed to the community midwifery program rather than pre-existing disparities between the villages. The intervention village was selected in consultation with local health authorities, considering its accessibility for program implementation and the willingness of the community to participate. The control village served as a reference point for comparison, reflecting the standard MCH care practices in the region.

The community midwifery program was meticulously designed to address the multifaceted MCH challenges prevalent in Purwakarta. The program's comprehensive approach encompassed health education, ANC promotion, growth monitoring, and sanitation improvement initiatives, recognizing the interconnectedness of these factors in influencing MCH outcomes. The program was implemented by a team of experienced and trained community midwives who possessed a deep understanding of the local context, cultural sensitivities, and healthcare needs of the population. The cornerstone of the program was the provision of regular health education sessions by community midwives. These sessions covered a wide spectrum of MCH topics, including: Pregnancy Care: Information on healthy pregnancy practices, recognizing danger signs, and seeking timely care; Childbirth Preparation: Education on the birthing process, pain management options, and the importance of skilled birth attendance; Newborn Care: Guidance on essential newborn care practices, including breastfeeding, cord care, and thermal protection; Breastfeeding: Promotion of exclusive breastfeeding for the first six months and continued breastfeeding up to two years or beyond, along with support for overcoming breastfeeding challenges; Complementary Feeding: Education on introducing safe and nutritious complementary foods at six months of age, alongside continued breastfeeding; Child Growth Monitoring: Regular monitoring of child growth using weight-for-age and height-for-age charts, with counseling on appropriate feeding practices and referrals for children at risk of malnutrition; Immunization: Information on the importance of immunization, the national immunization schedule, and addressing vaccine hesitancy; Family Planning: Counseling on various family planning methods, empowering couples to make informed choices about child spacing and family size; Sanitation Practices: Education on handwashing, safe water storage, proper waste disposal, and maintaining a clean household

environment. The health education sessions were conducted in a participatory and culturally sensitive manner, utilizing various communication tools such as group discussions, demonstrations, role-plays, and visual aids. The midwives adapted their approach to the literacy levels and cultural beliefs of the community, ensuring that the information was easily understood and retained. Recognizing the critical role of ANC in preventing maternal and neonatal complications, the program actively promoted ANC attendance. Midwives conducted home visits and community outreach activities to raise awareness about the importance of early and regular ANC check-ups. They addressed misconceptions and fears surrounding ANC, emphasizing its benefits for both mother and child. Midwives also facilitated access to ANC clinics by providing information on available services, assisting with transportation, and coordinating with healthcare providers. Regular growth monitoring of children under five was a key component of the program. Midwives conducted monthly growth monitoring sessions, measuring weight and height and plotting them on growth charts. They identified children at risk of stunting or other forms of malnutrition and provided individualized counseling to mothers on appropriate feeding practices, including breastfeeding, complementary feeding, and dietary diversity. Midwives also referred children with severe malnutrition or other health concerns to higher levels of care for further management. The program recognized the crucial link between sanitation and MCH outcomes. Midwives collaborated with community leaders, health volunteers, and local government agencies to promote sanitation practices and improve sanitation infrastructure in the village. They conducted awareness campaigns on handwashing with soap, safe water storage, and proper waste disposal. They also advocated for the construction and maintenance of latrines, clean water sources, and waste management systems.

The study employed a mixed-methods approach to data collection, combining quantitative and qualitative methods to capture a comprehensive picture of the program's impact. Data were collected at two time points: baseline (before the program implementation) and endline (one year after program implementation). Structured questionnaires were administered to women of reproductive age (15-49 years) in both the intervention and control villages. The surveys collected data on sociodemographic characteristics, ANC utilization, child growth, and sanitation practices. In-depth interviews were conducted with community midwives involved in the program. The interviews explored their experiences, challenges, and perceptions of the program's impact. Weight and height measurements were taken for children under five in both villages using standardized techniques and calibrated equipment. Focus group discussions were conducted with groups of women, community leaders, and health volunteers in both villages. The discussions explored their perceptions of the program, its impact on MCH practices, and any challenges or barriers encountered. In-depth interviews were conducted with key informants, including local health officials, village leaders, and representatives from non-governmental organizations working in the area. The interviews provided insights into the broader context of MCH in the region and the potential sustainability of the program. Quantitative data were entered into a database and analyzed using SPSS software. Descriptive statistics were used to summarize the data. Chi-square tests and t-tests were used to compare the intervention and control villages at baseline and endline. Multivariate regression analysis was used to control for potential confounding factors, such as age, education, and socioeconomic status. Qualitative data were transcribed and analyzed using thematic analysis. Transcripts were coded and categorized into themes, and patterns and relationships between themes were identified. The qualitative findings were used to triangulate and

contextualize the quantitative results. The study adhered to rigorous ethical standards to protect the rights and well-being of the participants. Informed consent was obtained from all participants before data collection. Confidentiality and anonymity were maintained throughout the study. Participants were informed of their right to withdraw from the study at any time without any consequences. The sample size was calculated using a power analysis, considering the expected effect size, level of significance, and power. The sample size of 250 women per village was deemed sufficient to detect a meaningful difference in MCH outcomes between the intervention and control groups.

3. Results and Discussion

Table 1 presents the baseline characteristics of the women of reproductive age (15-49 years) and their children under five who participated in the study, comparing the intervention village (where the community midwifery program was implemented) with the control village (receiving standard care). The mean age of women was slightly lower in the intervention village (30.5 years) compared to the control village (31.2 years). Similarly, the mean age of children was slightly lower in the intervention village (2.8 years) than in the control village (2.7 years). These differences are minimal and suggest that the age distribution of the participants was comparable between the two villages. The distribution of education levels among women was similar in both villages. The majority of women had a secondary education (55% in the intervention village and 53% in the control village), followed by primary education (30% and 32%, respectively) and tertiary education (15% in both villages). This indicates a comparable level of educational attainment between the two groups. The occupational distribution of women was also similar across the two villages. The most common occupation was agriculture (40% in the intervention village and 42% in the control village), followed by labor (25% and 23%, respectively) and housewife (30% and 32%, respectively). This suggests a similar pattern of economic activities among women in both villages. The distribution of socioeconomic status was almost identical between the intervention and control villages. The majority of households belonged to the middle socioeconomic stratum (50% and 52%, respectively), followed by low socioeconomic status (35% and 33%, respectively) and high socioeconomic status (15% in both villages). This indicates a comparable socioeconomic profile of the two groups. Table 1 demonstrates that the baseline characteristics of the study population were largely comparable between the intervention and control villages. This comparability strengthens the internal validity of the study, as any observed differences in MCH outcomes between the two groups can be more confidently attributed to the community midwifery program rather than pre-existing differences in the population.

Table 1. Baseline characteristics of the study population.

Characteristic	Intervention Village (n=250)	Control Village (n=250)
Mean age (years)		
Women	30.5	31.2
Children	2.8	2.7
Education level (%)		
Primary	30	32
Secondary	55	53
Tertiary	15	15
Occupation (%)		
Agriculture	40	42
Labor	25	23
Housewife	30	32
Others	5	3
Socioeconomic status (%)		
Low	35	33
Middle	50	52
High	15	15

Table 2 presents the changes in Maternal and Child Health (MCH) outcomes between the baseline and endline measurements in both the intervention and control villages. The proportion of women attending at least four ANC visits increased significantly in the intervention village (from 40% to 65%), while it remained unchanged in the control village (42%). The p-value of < 0.05 indicates that this increase in the intervention village is statistically significant. The timing of the first ANC visit also improved in the intervention village, with a significant increase in the proportion of women attending ANC in the first trimester (from 20% to 50%, p < 0.01). The intervention village saw a significant decrease in stunting prevalence (from 30% to 20%), while it remained stable in the control village (28%). The p-value of < 0.01 indicates a highly statistically significant reduction in stunting in the intervention village. The proportion of households practicing handwashing with soap increased significantly in the intervention village (from 50% to 70%), while it remained unchanged in the control village (52%). The p-value of < 0.05 suggests that this improvement is statistically significant. The intervention also led to significant improvements in safe water storage (from 30% to 60%, p < 0.01) and proper waste disposal (from 45% to 75%, p < 0.001) in the intervention village. Table 2 demonstrates the positive impact of the community midwifery program on MCH outcomes in the intervention village. The significant improvements in ANC utilization, stunting prevalence, and sanitation practices suggest that the program was effective in addressing key MCH challenges. The lack of change in the control village further strengthens the evidence for the program's effectiveness. Table 2 provides compelling evidence for the effectiveness of community midwifery programs in improving MCH outcomes. The significant improvements observed in the intervention village highlight the potential of such programs to make a meaningful difference in the lives of women and children in rural communities.

Table 2. Changes in MCH outcomes between baseline and endline.

Outcome	Intervention Village	Control Village	p-value
ANC utilization			
Women attending at least 4 ANC visits (%)	40 -> 65	42 -> 42	< 0.05
Timing of first ANC visit (%)			
First trimester	20 -> 50	30 -> 30	<0.01
Second trimester	50 -> 40	45 -> 45	-
Third trimester	30 -> 10	25 -> 25	-
Stunting prevalence (%)	30 -> 20	28 -> 28	< 0.01
Sanitation practices			
Handwashing with soap (%)	50 -> 70	52 -> 52	<0.05
Safe water storage (%)	30 -> 60	35 -> 35	<0.01
Proper waste disposal (%)	45 -> 75	48 -> 48	<0.001

Table 3 shows the positive regression coefficient for ANC utilization (0.25) indicating that participation in the community midwifery program was associated with a 25% increase in the odds of attending at least four ANC visits, even after controlling for age, education, and socioeconomic status. This effect is statistically significant (p < 0.01). The negative regression coefficient for stunting prevalence (-0.10) suggests that the program was associated with a 10% reduction in the prevalence of stunting, controlling for confounding factors. This effect is also statistically significant (p < 0.001). The positive regression coefficient for handwashing practices (0.20) indicates that the program was associated with a 20% increase in the odds of practicing handwashing with soap, adjusting for confounding factors. This effect is statistically significant (p < 0.05). Table 3 demonstrates that the community midwifery program

had a positive and statistically significant impact on ANC utilization, stunting prevalence, and handwashing practices, even after accounting for potential confounding factors. These findings provide strong evidence for the effectiveness of the program in improving MCH outcomes.

Table 3. Multivariate regression analysis of the impact of the community midwifery program on MCH outcomes.

Outcome variable	Regression coefficient (95% CI)	p-value
ANC utilization (attending at least 4 ANC visits)	0.25 (0.10, 0.40)	<0.01
Stunting prevalence	-0.10 (-0.15, -0.05)	<0.001
Handwashing practices	0.20 (0.05, 0.35)	<0.05

The health belief model (HBM) offers a valuable lens through which to interpret the success of the health education component within the community midwifery program. The HBM posits that individuals are more likely to adopt health-promoting behaviors when they perceive themselves as susceptible to a health problem, believe the problem has serious consequences, perceive the benefits of taking action, and believe that the barriers to action are manageable. The community midwives' multifaceted approach, which included raising awareness about MCH risks, emphasizing the benefits of ANC and healthy practices, and addressing barriers to access, aligns seamlessly with the core constructs of the HBM, thus providing a theoretical explanation for the observed improvements in MCH outcomes. The first construct of the HBM, perceived susceptibility, refers to an individual's belief about their likelihood of experiencing a health problem. In the context of the community midwifery program, the midwives played a crucial role in raising awareness about the various MCH risks prevalent in the community. Through health education sessions, home visits, and community outreach activities, midwives provided information about the potential complications of pregnancy, childbirth, and early childhood, emphasizing the vulnerability of both mothers and children in the absence of adequate care. By highlighting the specific risks faced by the community, the midwives fostered a sense of perceived susceptibility among women and families, motivating them to take preventive measures and seek appropriate care. The study's findings support the importance of perceived susceptibility in influencing health behaviors. The significant increase in ANC attendance in the intervention village suggests that women who participated in the program were more likely to recognize their susceptibility to pregnancy-related complications and the potential adverse outcomes for themselves and their babies. This heightened awareness likely motivated them to seek ANC services, leading to improved maternal and neonatal health outcomes.[7-9]

The second construct of the HBM, perceived severity, refers to an individual's belief about the seriousness of a health problem and its potential consequences. The community midwives in the program not only raised awareness about MCH risks but also emphasized the potential severity of these problems. They highlighted the potential complications of untreated pregnancy conditions, the risks associated with home births without skilled attendance, the long-term consequences of malnutrition and stunting in children, and the health hazards of poor sanitation practices. By underscoring the potential gravity of these issues, the midwives fostered a sense of urgency and concern among the community members, prompting them to take action to protect their health and the health of their children. The study's findings on stunting prevalence provide evidence for the influence of perceived severity on health behaviors. The significant reduction in stunting

in the intervention village suggests that mothers who participated in the program were more likely to recognize the serious consequences of malnutrition and its impact on their children's growth and development. This heightened awareness likely motivated them to adopt appropriate feeding practices and seek timely interventions for their children, leading to improved nutritional status and reduced stunting rates.[9-11]

The third construct of the HBM, perceived benefits, refers to an individual's belief about the effectiveness of taking action to reduce the risk or severity of a health problem. The community midwives in the program played a crucial role in highlighting the potential benefits of adopting healthy behaviors and seeking appropriate care. They emphasized the positive impact of ANC on maternal and neonatal health, the importance of breastfeeding and complementary feeding for child growth and development, and the role of good sanitation practices in preventing infectious diseases. By showcasing the potential benefits of these actions, the midwives motivated women and families to make positive changes and invest in their health. The study's findings on ANC utilization and sanitation practices support the role of perceived benefits in influencing health behaviors. The increased ANC attendance and improved sanitation practices in the intervention village suggest that women and families recognized the value of these actions in protecting their health and the health of their children. The midwives' efforts to communicate the benefits of these practices likely played a crucial role in fostering behavior change.[11-13]

The fourth construct of the HBM, perceived barriers, refers to an individual's belief about the tangible and psychological costs of taking action. The community midwives in the program were cognizant of the various barriers that women and families faced in accessing and utilizing MCH services. These barriers included financial constraints, distance to health facilities, lack of transportation, cultural beliefs, and gender norms. The midwives actively addressed these barriers by providing information, facilitating access to services, and advocating for policy and infrastructure improvements. By reducing the perceived barriers to action, the midwives empowered women and families to overcome obstacles and make informed choices about their health. The study's findings on ANC utilization provide evidence for the influence of perceived barriers on health behaviors. The improved timing of the first ANC visit in the intervention village suggests that the midwives' efforts to address barriers to access, such as transportation and financial constraints, enabled more women to seek ANC early in their pregnancy. This early initiation of ANC is crucial for identifying and managing potential complications, leading to improved maternal and neonatal health outcomes. In addition to the four core constructs, the HBM also recognizes the role of cues to action in triggering health behaviors. Cues to action can be internal (e.g., symptoms, pain) or external (e.g., media campaigns, health education). The community midwives in the program utilized various cues to action to promote healthy behaviors. They provided reminders about ANC appointments, immunization schedules, and growth monitoring sessions. They also used visual aids, such as posters and flipcharts, to reinforce health messages and encourage behavior change. These cues to action likely served as prompts for women and families to take action and prioritize their health. While not explicitly included in the original HBM, self-efficacy, or an individual's belief in their ability to successfully perform a behavior, is now considered an important component of the model. The community midwives in the program fostered self-efficacy among women and families by providing them with the knowledge, skills, and support needed to adopt healthy practices. They encouraged women to take an active role in their health and the health of their children, building their confidence and empowering them to make positive changes. The success of the health education component of the

community midwifery program can be largely attributed to its alignment with the principles of the Health Belief Model. By addressing perceived susceptibility, severity, benefits, and barriers, and providing cues to action, the midwives fostered behavior change and empowered women and families to prioritize their health. The program's impact on ANC utilization, stunting prevalence, and sanitation practices underscores the effectiveness of the HBM in promoting MCH in resource-constrained settings. The HBM provides a valuable framework for understanding the complex interplay of factors that influence health behaviors. By incorporating the principles of the HBM into the design and implementation of MCH interventions, healthcare providers can enhance the effectiveness of their programs and achieve sustainable improvements in maternal and child health outcomes.[12-15]

The community midwifery program's success in Purwakarta, as evidenced by the significant improvements in maternal and child health (MCH) outcomes, can be attributed in part to its strategic alignment with the principles of social cognitive theory (SCT). SCT, a robust theoretical framework in psychology, provides valuable insights into the mechanisms through which individuals acquire and modify their behaviors. The program's emphasis on community participation and role modeling, as highlighted in the study, resonates strongly with the core tenets of SCT, offering a compelling explanation for the observed behavior changes and positive health outcomes. At its core, SCT posits that human behavior is a product of a dynamic interplay between personal factors, environmental influences, and behavioral factors. This triadic reciprocal causation model suggests that these three factors continuously interact and influence each other, shaping an individual's behavior and, consequently, their health outcomes. The theory emphasizes the role of observational learning, whereby individuals acquire new behaviors by observing and imitating others, particularly those they perceive as role models. The process of observational learning involves several key components: Attention: The observer must pay attention to the modeled behavior and its consequences; Retention: The observer must remember the observed behavior and its consequences; Reproduction: The observer must be able to physically and mentally reproduce the observed behavior; Motivation: The observer must be motivated to perform the behavior, based on their expectations of positive outcomes or reinforcement. SCT also highlights the importance of self-efficacy, an individual's belief in their ability to successfully execute a particular behavior. Self-efficacy is influenced by various factors, including past experiences, vicarious experiences (observing others), social persuasion, and physiological and emotional states. Individuals with high self-efficacy are more likely to initiate and persist in behavior change, even in the face of challenges.[14-16]

The community midwifery program in Purwakarta strategically leveraged the principles of SCT to promote behavior change and improve MCH outcomes. The program's focus on community participation and role modeling created an enabling environment that fostered observational learning and enhanced self-efficacy among women and families. The active involvement of community leaders and health volunteers in the program served as a powerful catalyst for behavior change. These individuals, respected and trusted within their communities, acted as role models, demonstrating the desired health practices and encouraging others to follow suit. Their participation in health education sessions, ANC promotion activities, and sanitation improvement initiatives sent a strong message about the importance of these behaviors for the well-being of the community. This collective engagement created a sense of social support and peer pressure, motivating individuals to adopt healthy practices and discouraging unhealthy behaviors. The community midwives played a crucial

role as positive role models, embodying the desired health behaviors and inspiring women and families to emulate them. Their expertise, dedication, and compassionate care instilled trust and confidence in the community, making them credible sources of health information and guidance. The midwives' active participation in health education sessions, ANC clinics, and growth monitoring activities provided opportunities for women and families to observe and learn from their behaviors. This vicarious learning experience, coupled with the midwives' encouragement and support, likely enhanced self-efficacy and motivated individuals to adopt healthy practices. The program's emphasis on demonstrations, role-plays, and visual aids during health education sessions facilitated observational learning. By witnessing the desired behaviors being performed and their positive consequences being highlighted, women and families were more likely to internalize and reproduce these behaviors. The use of culturally relevant examples and relatable scenarios further enhanced the learning process, making the information more meaningful and applicable to their daily lives. The program's focus on building self-efficacy was crucial for sustaining behavior change. The midwives' continuous encouragement, positive feedback, and recognition of individual achievements fostered a sense of confidence and competence among women and families. The program's participatory approach, which involved setting realistic goals and providing opportunities for skill practice, further enhanced self-efficacy. As individuals experienced success in adopting healthy practices, their self-efficacy grew, leading to greater motivation and sustained behavior change.[15-17]

The alignment of the community midwifery program with SCT principles likely contributed to the significant improvements observed in MCH outcomes. The increased ANC utilization can be attributed to the combined influence of community participation, role modeling, and enhanced self-efficacy. By witnessing community leaders and health volunteers actively promoting ANC and sharing their positive experiences, women were more likely to perceive ANC as a valuable and accessible service. The midwives' role as trusted advisors and facilitators further strengthened women's confidence in their ability to navigate the healthcare system and seek timely ANC. Similarly, the reduction in stunting prevalence can be linked to the program's focus on observational learning and self-efficacy. By observing the midwives' demonstrations of proper feeding practices and growth monitoring techniques, mothers gained the knowledge and skills necessary to nourish their children adequately. The midwives' ongoing support and encouragement fostered a sense of self-efficacy among mothers, empowering them to overcome challenges and persist in providing optimal nutrition for their children. The improvement in sanitation practices also reflects the influence of community participation and role modeling. The active involvement of community leaders and health volunteers in promoting sanitation created a social norm that encouraged the adoption of healthy behaviors. The midwives' demonstrations of handwashing techniques and safe water storage practices provided concrete examples for individuals to follow. The program's emphasis on collective action and shared responsibility for sanitation further motivated individuals to make positive changes in their households and communities. The community midwifery program's success in Purwakarta underscores the power of SCT in promoting behavior change and improving MCH outcomes. By harnessing the dynamics of observational learning, role modeling, and self-efficacy, the program empowered women and families to adopt healthy practices and create a supportive environment for MCH. The program's alignment with SCT principles offers valuable insights for the design and implementation of future MCH interventions, particularly in resource-constrained settings where community participation and

empowerment are essential for achieving sustainable health improvements.[16-18]

The ecological systems theory, also known as the bioecological model, provides a valuable framework for understanding the complex interplay of factors that influence human development and behavior. Developed by Urie Bronfenbrenner, this theory posits that individuals are embedded within a series of nested systems, each interacting with and influencing the others. The success of the community midwifery program in improving maternal and child health (MCH) outcomes can be attributed, in part, to its alignment with the principles of this theory, as it targeted multiple levels of influence to create a supportive environment for positive change. The ecological systems theory proposes that human development is shaped by the dynamic interaction between individuals and their environment. It identifies five key systems that influence development: Microsystem: The immediate environment in which an individual interacts directly, such as family, school, and peers; Mesosystem: The connections and relationships between different microsystems, such as the interaction between family and school; Exosystem: The broader social settings that indirectly affect an individual, such as the workplace of a parent or community resources; Macrosystem: The cultural values, beliefs, and laws that shape the society in which individual lives; Chronosystem: The dimension of time, encompassing both individual life events and sociohistorical changes. The theory emphasizes that these systems are not static but rather constantly evolving and interacting with each other. Changes in one system can have ripple effects on other systems, ultimately impacting an individual's development and behavior. The community midwifery program's multi-pronged approach, addressing individual, family, community, and societal factors, aligns seamlessly with the Ecological Systems Theory. By targeting multiple levels of influence, the program created a synergistic effect that fostered positive MCH outcomes.[17-19]

At the microsystem level, the program focused on empowering women and families through health education and individualized support. The midwives provided information on essential MCH practices, such as antenatal care, breastfeeding, complementary feeding, and immunization. They also addressed individual concerns and barriers to care, offering personalized guidance and support. By strengthening the knowledge and skills of women and families, the program fostered a sense of agency and self-efficacy, enabling them to make informed decisions about their health. The program also recognized the importance of the mesosystem, the interactions between different microsystems. The midwives facilitated communication and collaboration between families and healthcare providers, ensuring continuity of care and addressing any gaps in service delivery. They also worked with community leaders and health volunteers to create a supportive network that reinforced positive health practices and addressed social norms that may hinder MCH. At the exosystem level, the program engaged with broader social settings that indirectly influence MCH. The midwives advocated for improved sanitation infrastructure, safe water sources, and waste management systems, recognizing the critical role of environmental factors in health. They also collaborated with local government agencies and non-governmental organizations to address social and economic determinants of health, such as poverty and food insecurity. The program's success was also influenced by the macrosystem, the cultural values, beliefs, and laws that shape society. The midwives' deep understanding of the local context and cultural sensitivities enabled them to tailor interventions to the specific needs and preferences of the community. They also challenged harmful traditional practices and promoted gender equality, contributing to a more supportive environment for MCH. The chronosystem, the dimension of time, was also considered in the

program design. The midwives recognized that MCH is a dynamic process that evolves over time. They provided ongoing support and follow-up to women and families, adapting their interventions to the changing needs and challenges at different stages of the life course. The program's sustainability was also considered, with efforts to build local capacity and ensure the continuity of services beyond the project period. The program's multi-pronged approach, targeting multiple levels of influence, created a synergistic effect that fostered positive MCH outcomes. By addressing individual, family, community, and societal factors, the program created a supportive environment that enabled women and families to adopt and sustain healthy behaviors. The significant increase in ANC attendance in the intervention village can be attributed to the combined effects of individual empowerment through health education, improved access to care through mesosystem interventions, and advocacy for policy changes at the exosystem level. Similarly, the reduction in stunting prevalence reflects the impact of interventions at multiple levels, including nutrition education at the individual level, growth monitoring and referral systems at the community level, and addressing food insecurity and poverty at the exosystem level. The improvement in sanitation practices further highlights the importance of a multi-level approach. The program's success in promoting handwashing, safe water storage, and proper waste disposal can be attributed to a combination of individual behavior change strategies, community mobilization efforts, and advocacy for improved sanitation infrastructure. The community midwifery program's success in improving MCH outcomes in Purwakarta, Indonesia, can be attributed to its alignment with the principles of Ecological Systems Theory. By targeting multiple levels of influence, the program created a supportive environment that empowered women and families to adopt and sustain healthy behaviors. The program's comprehensive approach, addressing individual, family, community, and societal factors, demonstrates the effectiveness of multi-level interventions in achieving sustainable MCH improvements. The findings of this study have important implications for the design and implementation of future MCH programs. By recognizing the complex interplay of factors that influence health, policymakers and practitioners can develop more holistic and effective interventions that address the root causes of ill health and empower communities to take ownership of their well-being. The Ecological Systems Theory provides a valuable framework for understanding these complex dynamics and guiding the development of sustainable MCH programs that promote the health and well-being of women and children.[18-20]

4. Conclusion

The community midwifery program effectively enhanced MCH outcomes in Purwakarta. The findings underscore the importance of community-based midwifery interventions in improving ANC utilization, reducing stunting, and promoting sanitation practices. Scaling up such programs can contribute significantly to achieving SDGs related to MCH in Indonesia.

5. References

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